



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/986,721

11/09/2001

Naoki Kubo

0378-0385P

5854

2292 7590 07/30/2007
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

ROSARIO, DENNIS

ART UNIT

PAPER NUMBER

2624

NOTIFICATION DATE

DELIVERY MODE

07/30/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<p align="center">Office Action Summary</p>	Application No. 09/986,721	Applicant(s) KUBO, NAOKI	
	Examiner Dennis Rosario	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE 7/2/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-13, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-13, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/2/07 has been entered.

Response to Amendment

2. The amendment was received on 7/2/07. Claims 1-6, 10-13, 15 and 16 are pending.

Allowable Subject Matter

3. The indicated allowability of claims 6 and 13 is withdrawn in view of the newly discovered reference(s) to Yi (US Patent 6,778,187 B1). Rejections based on the newly cited reference(s) follow.

Response to Arguments

4. In response to applicant's argument on page 11, lines 1-5 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "...compressing the dynamic range of image data, i.e.,...reducing the quantization steps...") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. In response to applicant's argument on page 12, last paragraph that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "reduction of the bit positions of the quantizing levels of the image signals (i.e., "...reducing the bit dept[h] of the quantized image signals...") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Upon review of the applicant's remarks, the claimed "dynamic range" was described in terms not claimed as discussed in paragraphs 3 and 4, above. The examiner suggests that the applicant specifically define the claimed "dynamic range" so that a Broadest Reasonable Interpretation (MPEP 2111) can be applied.

Art Unit: 2624

Currently, the examiner is using Plain Meaning (MPEP 2111.01) interpretation with respect to the claimed "dynamic range" which is understood as a "range of colors" in col. 1, line 34 of Johnson (US Patent 5,892,847). Thus, to reduce the dynamic range means to reduce the range of colors "into fewer data samples representing the image with fewer bits per pixel than the original format (col. 8, lines 49-51)" in the context of Plain Meaning interpretation.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US Patent 5,892,847 A).

Regarding claim 1, claim 1 was rejected twice in view of Johnson that discloses a method of processing image data comprising the steps of:

- a) converting (via fig. 9, numerals 200,198 and unlabeled box between numerals 202 and 200) broad-range image data (fig. 9,num. 190) having a broad dynamic range to narrow-range image data (figures 9 and 10,num. 208) narrower in dynamic range than the broad-range image data (due to the unlabeled box that performs quantization that "reduces the number of bits devoted to the corresponding DCT coefficient..." in col. 30, lines 25,26);
- b) inversely converting (fig. 10, numerals 209 and 210) the narrow-range image data to thereby output inversely converted image data (fig. 10, num. 211) having a same dynamic range (since the output of fig. 10,num. 211 is a reconstructed version) as the broad-range image data;
- c) calculating difference data (fig. 10,num. 212) representative of a difference between the broad-range image data (figures 9 and 10,num. 190) and the inversely converted image data (fig. 10, num. 211); and

d) generating a file (fig. 4,num. 104) that relates the difference data (represented in fig. 22b, label "VQ1," under "PANEL 1," which is interpreted to be the claimed difference data since VQ1 is based on a "RESIDUAL" as shown in fig. 11,numerals 212 which in turn is a difference as shown in fig. 10,num. 212 that corresponds to an unlabeled subtraction symbol) to said step of converting (represented in fig. 22b, under "PANEL 1" as "DCT") and the narrow-range image data (represented in fig. 22b as "PANEL 1") to one another (since the claimed difference data, VQ1, and the claimed transform step, DCT, include data that make up the claimed narrow-range image data, PANEL 1, which corresponds to "file segments...at the front of the file" in col. 4, lines 32,33 which corresponds a "good quality miniature" in col. 4, line 37 which is interpreted as the claimed "narrow-range image data"); or...

...a') converting (via fig. 34, num. 1004) broad-range image data (fig. 34,num. 1002) having a broad dynamic range to narrow-range image data (Fig. 34: "Y'") narrower in dynamic range than the broad-range image data (since fig. 34,num. 1004 is a compression);

b') inversely converting (fig. 34,num. 1005) the narrow-range image data to thereby output inversely converted image data (fig. 34: "X'") having a same dynamic range as the broad-range image data;

c') calculating difference data (fig. 34, num. 1012) representative of a difference between the broad-range image data and the inversely converted image data; and

d') generating a file (fig. 34,num. 1006) that relates (via fig. 34,num. 1007):

d1') the difference data (said 1012),

d2') information (fig. 34,num. 1009) relating (via said 1007) the difference data (said 1012) to said step of converting (since said 1009 is related to said step of converting by using said Y' which is of said step of converting) and

d3') the narrow-range image data (said Y') to one another (represented as said 1007 that is a function of the claimed difference data or 1012, the claimed information or 1009 and the claimed narrow range image data or Y' that are all combined to produce fig. 34,num. 1003).

Regarding claim 2 see fig. 1,numerals 104 and 106.

Regarding claim 3, Johnson discloses the method in accordance with claim 1, wherein the broad-range image data (the output of fig. 9,num. 198) relates to the inversely converted image data (fig. 10, num. 211) in such a manner that the broad-ranged image data (the output of fig. 9,num. 198) can be reproduced (as shown in fig. 34,num. 1003) by adding (via fig. 34,num. 1007) the difference data (fig. 10,num. 212 and represented in fig. 34 as num. 1012) to the inversely converted image data (the output of fig. 34,num. 1008).

Regarding claim 4, Johnson discloses the method in accordance with claim 1, wherein said step of converting (fig. 9, unlabeled box between numerals 202 and 200) comprises:

- a) the sub-step of linearly converting ("linearly quantizing" in col. 28, line 47) a number of quantizing levels of the broad range image data, and
- b) said step of inversely converting comprises:
 - b1) the sub-step of linearly, inversely converting ("linear dequantization" in col. 28, lines 66,67) a number of quantizing levels of the narrow-range image data.

Regarding claim 5, Johnson discloses the method in accordance with claim 1, wherein said step of converting (via fig. 9, numerals 200,198 and unlabeled box between numerals 202 and 200) comprises:

a) the sub-step of nonlinearly converting (via fig. 9,num. 198 transforms "each 8 X 8...block" in col. 11, line 49 where the transformation of a 8 X 8 block is interpreted as a non-linear transformation. Since fig. 9,num. 198 transforms a 2-dimensional image and not a 1-dimensional image.) a number of quantizing levels (fig. 9,num. 200) of the broad-range image data (fig. 9,num. 190), and

said step of inversely converting (fig. 10, numerals 209 and 210) comprise:

b) the sub-step of nonlinearly, inversely converting (fig. 10,num. 210 performs the same nonlinear transformation for the same reasons as in claim 5 a), above) a number of quantizing levels (fig. 10,num. 254) of the narrow-range image data (fig. 10,num. 208).

Claims 10,11 and 12 are rejected the same as claims 1,4 and 5. Thus, argument similar to that presented above for claims 1,4 and 5 of a method is equally applicable to claims 10,11 and 12,respectively, of an apparatus.

8. Claims 6,13,15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Yi (US Patent 6,778,187 B1).

Regarding claim 6, Yi discloses a method of processing image data comprising the steps of:

a) converting (via fig. 2: S22) broad-range image ("source depth SOD" in col. 7, line 66) data having a broad dynamic range (or "8 bits" in col. 5, line 44) to narrow-range image data ("5" in col. 5, line 45 which is a "stored depth (STD)" in col. 5, line 36) narrower (or "smaller" in col. 5, line 43) in dynamic range than the broad-range image data;

b) inversely converting (via fig. 3: UNCOMPRESS) the narrow-range image data (STD) to thereby output inversely converted image data (fig. 3: ROD) having a same (or equal as indicated by an equal sign in "ROD R=SOD R" in col. 7, line 13) dynamic range as the broad-range image data (SOD);

c) calculating difference ("difference" in col. 7, line 35 that corresponds to fig. 2, S24-S26 and fig. 3, S331-S333) data representative of a difference between the broad-range image data (STD) and the inversely converted image data (ROD); and

d) generating a file (upon the input of fig. 2:S28) that relates:

d1) the difference data (contained within said S24-S26 and S331-S333),

d2) information (fig. 2: STD R LSB) relating the difference data (since STD R LSB is used with the difference data) to said step of converting (since STD R LSB corresponds to fig. 2:S22) and

d3) the narrow-range image data to one another (since STD R LSB is the narrow range image data), wherein

e) said step of converting comprises:

e1) the sub-step of reducing a number of quantizing bits (to obtain a "bit-length reduced value of...b1 1101" in col. 6, lines 66,67) of the broad-range image data (represented as "b1110 1011" in col. 6, line 57) beginning with a least significant quantizing bit (for a "right shift operator" in col. 6, lines 60,61) and continuing (right shifting) in sequence from the least significant bit towards higher order bits until the number of quantizing bits of the broad-range image data becomes equal (as indicated by said b1 1101 that is five bits which is the same as the narrow range image data of said 5) to a number of quantizing bits of the narrow-range image data, and

e2) said step of inversely converting comprises:

e21) the sub-step of adding ZERO bits ("appending two 0 bits" in col. 8, line 33) to a least significant quantizing bit of the narrow-range image data (said b1 1101) until the number(eight) of quantizing bits of the narrow-range image data becomes equal (as shown by "b1110 1100" in col. 8, line 34 and said "b1110 1011" in col. 6, line 57) to a number (eight) of quantizing bits of the broad-range image data (represented as "b1110 1011" in col. 6, line 57).

Claim 13 is rejected the same as claim 6. Thus, argument similar to that presented above for claim 6 is equally applicable to claim 13.

Regarding claim 15, Yi discloses the method in accordance with claim 6, further comprising:

- a) the step of recording the file (as indicated in fig. 2:STORE).

Regarding claim 16, Yi discloses the method in accordance with claim 6, wherein the broad-range image data (SOD) relates to the inversely converted image data (ROD) in such a manner that the broad-ranged image data (SOD) can be reproduced by adding (as indicated by the plus sign in fig. 3:S331) the difference data (said difference) to the inversely converted image data (ROD).

Conclusion

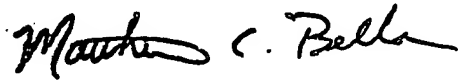
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DR
Dennis Rosario
Unit 2624



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600